

Corneal transplant outcome - a Swedish Register

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1. M Claesson, WJ Armitage, P Fagerholm, U Stenevi. Visual outcome in corneal grafts: a preliminary analysis of the Swedish Corneal Transplant Register.
Br J Ophthalmol 2002;86:174-180.
2. M Claesson, WJ Armitage. Astigmatism and the Impact of Relaxing Incisions After Penetrating Keratoplasty.
J Refract Surg. 2007;23:284-289
3. M Claesson, WJ Armitage. Corneal oedema after cataract surgery: predisposing factors and corneal graft outcome.
Acta Ophthalmologica. Published on line June 2008.
doi: 10.1111/j.1755-3768.2008.01180.x.
4. M Claesson, WJ Armitage. Corneal grafts at St John Eye Hospital, Jerusalem, January 2001- November 2002.
Br J Ophthalmol 2004;88:858-860
5. M Claesson, WJ Armitage, K Olsson-Abdellatif, N Sargent. Corneal transplant outcome in the Palestinian Territories: a two year follow-up study.
Eye, published on line 15/8/08.
doi:10.1038/eye.2008.263
6. M Claesson, WJ Armitage. Ten-year follow up of graft survival and visual outcome after penetrating keratoplasty in Sweden.
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Abstract

Aim. The aim of this study was to present different aspects of the outcome after corneal transplantation based on data from the Swedish Cornea Register.

Papers. The first paper describes the register and gives descriptive statistics and analysis of data from a two-year follow up, while the last paper presents data from a ten-year follow up. Papers two and three deal with two specific problems in corneal transplantation, astigmatism and corneal oedema after cataract surgery (bullous keratopathy, BK). Paper four and five compare the Swedish patients with a cohort from the Middle East.

Results. The major indications were keratoconus (29%), BK (21%) and a mixed group of other diagnoses (32%), including regrant. The overall incidence of rejection at two years was 15%, and regranting, which occurred in 10% of cases was related to rejection and other complications.

Visual acuity (VA) after two years improved most in keratoconus and this was still the case after ten years. Most changes in visual outcome after PK in all indications occurred during the first two postoperative years. Graft survival and VA at ten years depended mainly on complications occurring before two years postoperative.

The mean value of astigmatism at two years was 4.6 D (95% CI 4.4-4.7), independent of indication and preoperative astigmatism. In a group with high astigmatism (mean value 8.4 D) relaxing incisions reduced the astigmatism by 50%. At ten years there was a small increase in astigmatism in all indications.

Bullous keratopathy was one of the indications with poorest outcome. The risk of developing BK at the time of cataract surgery was influenced by pre-existing endothelial disease and cataract surgery done by phaco-emulsification.

In the Palestinian Territories the preponderance of keratoconus was higher than in Sweden. The patients came to surgery with a more advanced disease and more risk factors. They also developed more postoperative complication and the outcome was poorer, even though most gained some visual acuity.

Conclusion. Through the data analysed from the register our knowledge of the outcome after corneal transplantation has increased. The register will also allow evaluation of new techniques of corneal transplantation.

Key words: Corneal transplantation, quality register, long term follow up, astigmatism, bullous keratopathy, graft survival, visual outcome.

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